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HOUSEKEEPERS' CHAT Wednesday, Sept. 16, 1936.

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Subject: "CONDITION CHIMNEYS AND FIREPLACES." Information from the Bureau of Agricultural Engineering, United States Department of Agriculture. Bulletin available, 1649-F, "Construction of Chimneys and Fireplaces."

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Today's topic is an excellent illustration of the familiar phrase, the "power behind the throne." That is, for anyone but a confirmed feminist. It happens that improvements are frequently needed around a home which require heavier work than the woman of the house can undertake. But she may be the first to observe matters that need attention. She cannot correct them personally. It's up to her to get things done by somebody else.

So in talking about chimneys and fireplaces, I do not expect any of my listeners to climb up on their roofs and look down the chimneys or attempt to mend them if they need it. Simply turn on a little of the "power behind the throne" and get the men-folks interested in checking conditions before cold weather starts.

How's this for a battery of facts to start with? In a single state -- Iowa -- in the years 1930 and 1931 some 2532 dwelling-house fires in rural towns and out in the country were reported. Of these, 422 were directly traced to defective chimneys, causing a total money loss of $872,000. In the rural towns, the average loss per fire caused by these defects in chimneys was $1251.00; in the open country, $2507.00.

Can't I just hear you saying at this point, "John, we'd better take a look at our chimney before another day passes!" Certainly. You don't want to run the chance of a twenty-five hundred dollar fire, or a twelve hundred dollar blaze. Maybe there's nothing wrong with the chimney at all. But it will pay to look. The recent housing survey carried on by the Bureaus of Agricultural Engineering and Home Economics of the U. S. Department of Agriculture and the state agricultural colleges revealed plenty of defective chimneys, all ready for trouble to start. Some of the defects were in the original construction and some were due to age and neighborhood conditions.

I once lived in a house that stood about a block from a main line railroad. We could feel the house tremble whenever the big expresses roared by. After 10 years or so, smoke from the fireplace seeped right through one of the bed-room walls. We found, when the old chimney was torn down, that it had never been lined, and most of the mortar had shaken loose between bricks. There were even two bricks out of place. Rebuilding was expensive, but not as costly as a fire would have been.

Accumulations of soot or defective flues may be detected by holding a mirror in the thimble at the bottom of the chimney so that a beam of light will be thrown up and inside. Or if the top of the chimney is accessible it may be inspected by

letting down an electric flash light or lantern on a strong cord. The soot may be swept out by a swab made of bricks or a flat iron wrapped in gunny sacks and churned up and down inside the chimney. The Bureau of Agricultural Engineering says the smoke test is a very effective way of testing the chimney.

Build a fire at the base of the flue, out of paper, straw, wood or tar paper,- preferably some substance that will make a lot of smoke. When the smoke is passing in a dense column, have someone block its outlet at the top of the chimney by laying a wet blanket over the top. If there is any leakage in the flue, smoke will appear somewhere. This test sometimes reveals very bad leaks into adjoining flues or directly through the walls or between linings and walls. It may be necessary only to repoint the brickwork of the chimney, but some chimneys must be entirely rebuilt.

A chimney should be built of brick, stone, or special concrete block, and should have a tight lining. Building wood material into a chimney or against it, without proper insulation, is a common and serious fault. All wood work should be kept at least 2 inches away from the brickwork. Laying brick on edge instead of flat is wrong. Bricks should be properly bonded with mortar. The chimney should be supported from the ground, resting on a masonry base, never on any timber construction of the building. Its flues should be of the correct area in proportion to the size of the heating unit they serve,- furnace, fireplace, or stove. It is highly desirable that each heating unit should have a separate flue. Leaky flues are a frequent cause of heating troubles and destructive fires, and may permit dangerous gases to escape into the house. The smoke pipe should be anchored properly to the chimney, and the connection between the smoke pipe and flue should be tight.

If a fireplace smokes, the trouble may be due to the proportions of the opening, or to bad throat design, or to the height of the chimney. If a chimney is too short, currents of wind blow smoke back down into the room. The remedy is to build an extension to the chimney, carrying it high enough to come above the ridge of the roof. Then the smoke will be blown away as it rises. If the front opening of the fireplace is too high, it can sometimes be cut down by adding an iron or copper hood across the top of the fireplace.

If the throat or opening into the chimney flue is too small or too large, or if there is no "smoke shelf" or chamber inside the chimney above the throat, or if the damper is wrongly placed, the fireplace will not burn well. Send to the U. S. Department of Agriculture for Farmers' Bulletin 1649-F, "Construction of Chimneys and Fireplaces," to see how this smoke shelf should be built. The damper should be placed on a level with it, as a means of regulating the fire for fast burning and slow burning logs. A damper is also useful to shut the chimney altogether in summer against flies and mosquitoes, and in winter against the loss of heat when the furnace is in operation and there is no fire on the hearth.

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